

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MARTIN M. BARRERA and ALEX E. SPENCER

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Appeal No. 2005-2075  
Application No. 09/675,860 <sup>1</sup>

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ON BRIEF

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Before PAK, KRATZ, and JEFFREY T. SMITH, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 5, 7 through 10, 12 through 17, 19 through 21 and 26 through 30, which are all of the claims pending in the above-identified application.

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<sup>1</sup> Application for patent filed Sept. 29, 2000, entitled, Apparatus and Method Of Effective Fluid Injection And Vaporization For Chemical Vapor Deposition Application.

Appeal No. 2005-2075  
Application No. 09/675,860

APPEALED SUBJECT MATTER

Claims 1, 13 and 28 are representative of the subject matter on appeal and read as follows:

1. An apparatus for delivering a plurality of chemical vapor deposition fluids to a chamber, comprising:

a chemical vapor deposition chamber having a cavity comprising an inlet nozzle, a throat region and an exit nozzle,

said inlet nozzle having a first diameter adapted to receive a carrier fluid, and having a first pressure and a first temperature;

said throat region, having a first and second end, connected to said inlet nozzle at said first end, said throat region having a second diameter less than said first diameter and adapted to receive said carrier fluid from said inlet nozzle, said throat region having a second pressure lower than said first pressure and a second temperature, and having a first and a second aperture adjacent to said first and second ends for injecting, respectively, a first and a second chemical vapor deposition dopant into said throat region to allow for atomization of said first and second chemical vapor deposition dopants by said carrier fluid and mixing of said atomized first and second chemical vapor deposition dopants with said carrier fluid; said exit nozzle, connected to said throat region at said second end, having an exit pressure lower than said second pressure and a third temperature, said exit nozzle having a third diameter greater than said second diameter to allow for a substantial decrease in pressure from said first pressure to said exit pressure, and configured to introduce said mixed atomized first and second chemical vapor deposition dopants and said carrier fluid in the chemical vapor deposition chamber.

13. An apparatus for delivering a plurality of chemical vapor deposition fluids to a chemical vapor deposition chamber comprising:

a chemical vapor deposition chamber having a cavity comprising an inlet nozzle, a throat region and an exit nozzle,

said inlet nozzle having a first diameter adapted to receive a carrier fluid, and having a first pressure and a first temperature, said carrier fluid comprising a process compatible gas selected from the group consisting of O<sub>2</sub>, N<sub>2</sub>, and He;

said throat region, having a first and second end, connected to said inlet nozzle at said first end, said throat region having a second diameter less than said first diameter, and adapted to receive said carrier fluid from said inlet nozzle, said throat region having a second pressure and a second temperature and having a first and a second aperture adjacent to said first and second ends for injecting, respectively, a first and a second chemical vapor deposition fluid into said throat region to allow for atomization of said first and second chemical vapor deposition fluid by said carrier fluid and mixing of said atomized first and second chemical vapor deposition fluid with said carrier fluid, said first and second chemical vapor deposition fluids comprise fluids selected from the group consisting of precursors and dopants; and,

said exit nozzle, connected to said throat region at said second end, having said second diameter, said exit nozzle configured to maintain said second pressure and said second temperature, such that said exit nozzle is an extension of said throat region consisting of the same dimensions as said throat region, said exit region configured to introduce said atomized first and second chemical vapor deposition fluid and said carrier fluid in said chemical vapor deposition chamber.

28. An apparatus for delivering a plurality of chemical vapor deposition fluids to a chamber, comprising:

a chemical vapor deposition chamber having a cavity comprising a cross-flow injector, said cross-flow injector comprising an inlet nozzle, a throat region and an exit nozzle;

Appeal No. 2005-2075  
Application No. 09/675,860

said inlet nozzle having a first diameter adapted to receive a carrier fluid, and having a first pressure and a first temperature, said carrier fluid comprising a process compatible gas selected from the group consisting of O<sub>2</sub>, N<sub>2</sub>, and He;

said throat region, having a first and second end, connected to said inlet nozzle at said first end, said throat region having a second diameter less than said first diameter, and adapted to receive said carrier fluid from said inlet nozzle, said throat region having a second pressure and a second temperature and having a first and a second aperture adjacent to said first and second ends for injecting, respectively, a first and a second chemical vapor deposition dopants into said throat region to allow for atomization of said first and second chemical vapor deposition dopants by said carrier fluid and mixing of said atomized first and second chemical vapor deposition dopants with said carrier fluid; and,

said exit nozzle, having an exit pressure, connected to said throat region at said second end for receiving said atomized first and second chemical vapor deposition dopants and said carrier fluid; and

wherein said chemical vapor deposition chamber is adapted to receive said mixture of atomized first and second chemical vapor deposition dopants with said carrier fluid from said exit nozzle of said cavity.

#### PRIOR ART

The sole prior art reference relied upon by the examiner is:

Gwyn

4,397,422

Aug. 9, 1983

#### REJECTIONS

The appealed claims stand rejected as follows:

1. Claims 1, 3 through 5, 7 through 10, 13, 15 through 17, 19 through 21 and 26 through 30 under 35 U.S.C. § 102(b) as

- anticipated by the disclosure of Gwyn; and
2. Claims 2, 12, and 14 under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Gwyn.

#### OPINION

The initial inquiry into determining the propriety of the examiner's Sections 102(b) and 103(a) rejections is to correctly construe the scope of the claimed subject matter. Gechter v. Davidson, 116 F.3d 1454, 1457, 1460 n.3, 43 USPQ2d 1030, 1032 n.3 (Fed. Cir. 1997); In re Paulsen, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). Upon careful review of the claimed subject matter in light of the specification, it is apparent to us that the metes and bounds of the claimed subject matter cannot be ascertained. Therefore, we are unable to determine the propriety of the examiner's Sections 102(b) and 103(a) rejections. To do so would of necessity require speculation with regard to the metes and bounds of the claimed subject matter. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970); In re Steele, 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962). Accordingly, we procedurally reverse the examiner's Sections 102(b) and 103(a) rejections<sup>2</sup> and enter a new ground of rejection

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<sup>2</sup> As this procedural reversal is not based upon the merits of the examiner's Sections 102(b) and 103(a) rejections, the examiner may need to reintroduce them once the claims on

Appeal No. 2005-2075  
Application No. 09/675,860

against the claims on appeal as shown below:

Pursuant to the provisions of 37 CFR § 41.50(b) (2004) claims 1 through 5, 7 through 10, 12 through 17, 19 through 21 and 26 through 30 are newly rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the appellants regard as their invention.

As explained by our reviewing court in Allen Eng's Corp. v. Bartell Indus. Inc., 299 F.3d 1336, 1348, 63 USPQ 2d 1769, 1775 (Fed. Cir. 2002), the second paragraph of Section 112 requires that (1) the claims on appeal "particularly point out and distinctly claim an invention" and (2) the claims on appeal set forth what "the applicant regards as his invention." The former requires the claims on appeal to be definite while the latter requires the claims on appeal to recite the appellants' invention. Allen Eng's Corp. v. Bartell Indus. Inc., 299 F.3d at 1348-49, 63 USPQ2d at 1775-76. However, the claims on appeal, as written, do not meet either requirement.

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appeal are amended to meet the requirements of the second paragraph of Section 112.

The purpose of the definiteness requirement is:

[T]o provide those who would endeavor, in future enterprise, to approach the area circumscribed by the claims of a patent, with the adequate notice demanded by due process of law, so that they may more readily and accurately determine the boundaries of protection involved and evaluate the possibility of infringement and dominance. In re Hammack, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970).

However, due to the inconsistencies between the preamble and body of each of the independent claims on appeal, i.e., claims 1, 13 and 28, we are of the view that one of ordinary skill in the art would not be able to ascertain the boundaries of protection sought by the claims on appeal. While the preamble of each of the independent claims, for example, is directed to a chemical vapor deposition fluid delivery apparatus per se, the body thereof refers to a chemical vapor deposition chamber which is not part of the structure of the chemical vapor deposition fluid delivery apparatus.<sup>3</sup> Thus, from our perspective, it is not apparent to one of ordinary skill in the art from the wording of these claims whether the chemical vapor deposition fluid delivery apparatus is claimed or whether a combination of such delivery

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<sup>3</sup> The preambles of the independent claims themselves and the written description at pages 8 through 13 of the specification clearly indicate that the chemical vapor deposition chamber is separate and distinct from the claimed chemical vapor deposition fluid delivery apparatus.

apparatus and a chemical vapor deposition chamber is claimed. See Ex parte Kristensen, 10 USPQ2d 1701, 1703 (Bd. Pat. App. & Int. 1989). Accordingly, we conclude, as a matter of law, that the claims on appeal do not satisfy the definiteness requirement of the second paragraph of Section 112.

The purpose of the second requirement of the second paragraph of Section 112 discussed above is to ensure that the inventors are entitled to what they are claiming. As stated by our reviewing court in Allen Eng's Corp. v. Bartell Indus. Inc., 299 F.3d at 1349, 63 USPQ2d at 1776:

Where it would be apparent to one of skill in the art, based on the specification, that the invention set forth in a claim is not what the patentee regarded as his invention, we must hold that claim invalid under § 112.

At pages 8 through 13 of the specification, a chemical vapor deposition fluid delivery apparatus is defined as either "a cross-flow injector" or "a combination of a cross-flow injector and a heated manifold". The cross-flow injector is said to have an inlet nozzle, a throat and an exit nozzle. See the specification, pages 8-10. Nowhere does the specification, however, indicate that the chemical vapor deposition fluid delivery apparatus include, as part of its structure, a chemical vapor deposition chamber as recited in the claims on appeal. Nor



Appeal No. 2005-2075  
Application No. 09/675,860

does the specification indicate that the chemical vapor deposition chamber has "an inlet nozzle, a throat region and an exit nozzle" as recited in claims 1 and 13 on appeal. Thus, it is apparent to us that the claimed chemical vapor deposition fluid delivery apparatus and chemical vapor deposition chamber have structures different from those described in the specification.<sup>4</sup> As a result of these inconsistencies between the claims on appeal and the description of the invention in the specification, we are of the view that the claims on appeal do recite subject matter which the appellants regard as their invention as required by the second paragraph of Section 112.

#### CONCLUSION

In view of the new rejection set forth above, the examiner's Sections 102(b) and 103(a) rejections are procedurally reversed.

This decision contains a new ground of rejection pursuant to 37 CFR § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 CFR § 41.50(b) provides "[a] new ground of

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<sup>4</sup> Upon return of this application, the examiner should compare the specification as originally filed with the claims on appeal (which was amended during the prosecution of this application) to determine whether the claims on appeal also violate the written description requirement of the first paragraph of Section 112.

Appeal No. 2005-2075  
Application No. 09/675,860

rejection pursuant to this paragraph shall not be considered final for judicial review."

37 CFR § 41.50 (b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner . . . .

(2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record . . . .



Appeal No. 2005-2075  
Application No. 09/675,860

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